A Ski Binding, in Particular for Cross-Country Skiing

The invention relates to a cross-country ski binding according to the preamble of claim 1.

From DE 27 06 111 A, a ski binding of the initially mentioned type is known, in which two transversely movable, spring-loaded pins are provided which are carried by a spring steel wire, which consists of two levers each rotatably held on a rotation axis fixed on a carrier and directed perpendicularly to the ski upper side, which levers comprise pins acting like tongs for a respective engagement in a bearing arranged at the side of the toe-cap. This binding harbors the risk of an unintentional opening of the binding when travelling over uneven ground.

It is an object of the present invention to provide measures for counteracting the above-mentioned deficiency of the known ski binding and, moreover, to allow for a simple construction which is easy to mount.

This object is achieved by the measure according to claim 1.

By dividing the control mechanism according to claim 2, a higher resilience is achieved and, thus, pressing out of amounts of snow possibly present in

openings of the boot fittings is achieved.

By the mode of construction according to claim 3, a particularly economical production is possible, on the one hand, while it is ensured, on the other hand that the opening mechanism will also remain functional under difficult environmental conditions (icing up).

By the measure according to claim 4, the binding mechanism is protected against the penetration of water and snow.

By the measure according to claim 5, the advantage of the measure according to claim 1 is intensified.

By the triangular opening according to claim 6, linear guiding of the projections of the molded part is achieved, and thus, a precise control with as little frictional resistance as possible is attained.

The measure according to claim 7 allows for a particularly simple mode of construction, in particular for mounting.

By the measure according to claim 8, an increased resilience is obtained, thereby making it easier for the projections of the molded parts to press out any possible accumulations of snow in the corresponding openings of the boot parts.

By the measures according to claim 9, the safety

of the binding is increased.

By the bridge-like configuration according to claim 10, the economical mode of production can be combined with an exact linear guiding.

In the drawings, an exemplary embodiment of the cross-country ski binding according to the invention is explained in more detail.

Therein,

Fig. 1 shows a bottom view of the housing of the ski binding;

Fig. 2 shows a lid with the sliding element of the opening mechanism;

Fig. 3 shows the opening mechanism;

Fig. 4 shows a detail of the opening mechanism;

Fig. 5 shows a detail of the binding;

Fig. 6 shows a further detail of the binding;

Fig. 7 shows a central longitudinal section of the binding part according to Fig. 2; and

Fig. 8 shows a section according to line VIII-VIII of Fig. 7.

The binding housing consists of an external housing part 100 which has openings 103 on both sides for receiving the pins 101 of the step-in mechanism.

The housing 100 of the cross-country ski binding

is seated on a base plate 120 which, e.g., is screwed to a ski, on which base plate a sliding element 142 is mounted so as to be displaceable in the running direction, as shown in Figs. 2 and 3, which sliding element, via a hinge 130' extending transversely to the running direction, is connected to a lever 130 that projects obliquely upwards in the running direction, said lever, as is visible in Fig. 5, having an oblique surface 105 destined for stepping out, and a depression 106 for insertion of the pole for opening the binding.

To prevent snow from penetrating between base plate 129 and binding housing 100, the former is provided with a peripheral rib 107 which engages in a corresponding groove 108 of the housing part 100 (Figs. 1 and 3).

For the inventive cross-country ski binding to function as a step-in binding, either the pin projections 101 may be chamfered or rounded towards the top, or vice versa, if the pins are not chamfered, the corresponding boot fittings may have appropriate guiding curves so that stepping into the binding is possible without actuating the lever 130.

On both sides of the binding, the pins 101 project from one molded part 109 each (Figs. 1, 2 and 3), which

molded parts are located in mirror-inverted relationship on either side of the binding and provided with a projection 110 which, as shown in Fig. 4, extends into a triangular opening 111 or 111', respectively, of the sliding element 142. As can be seen in Fig. 4, the openings 111, 111' are located symmetrically opposite each other about an axis extending transversely to the running direction, and they are each provided with a guiding face 112, or 112', respectively, on which the respective projection 110 of the molded part 109 is supported, only one of the two projections 110 being entered in Fig. 4 for the sake of clarity.

In the present case, the latching pins 1 are each provided with a rounded portion at their ends facing away from each other, which rounded portion is located above that plane which extends through the longitudinal axis of the pin and, in the engaged state, in parallel to the ski upper side. The rounded portion may, however, extend as far as to the lower generatrix of the latching pins.

The molded parts 109 are each provided with a tapped blind hole 113 for receiving a pressure spring 136 (Figs. 3 and 6) which is tensioned between the molded parts 109 and the housing wall of the binding

housing 100. As can be seen from Fig. 4, preferably two pressure springs 136 are provided which are located adjacent each other in running direction.

The mirror-inverted arrangement of the two molded parts 109 and the possibility of installing two adjacently arranged pressure springs 136 provide for a substantially higher resilience than exists in conventional cross-country ski bindings, making it possible to better press out snow accumulated in corresponding holes of the boot.

The diagonally oppositely arranged projections 110 are supported on the oblique guiding faces 112, 112' in the acute-angled corners of the openings 111, 111' of the sliding element 142. When displacing the sliding element, the projections 109 are pressed towards each other under the influence of the guiding faces 112 and 112' contrary to the force of the springs 136, so as to release the pins 101 from their engaged position.

For stepping out, the skier presses the lever 130 downwards in the depression 106 with his pole. By this, the lever 130 slides along the chamfered face 105 obliquely forwards and downwards, thereby pulling the sliding element 142 forwards, whereby the two molded parts 109 are pulled together along the control curves

112, 112' and thus, the latching pins 101 relase the boot.

On its front end facing away from the lever 130, the sliding element 142 is guided in the bridge part 114 of the housing 100 visible in Fig. 5.

In Fig. 3, the boot fittings are schematically indicated and denoted by 115.